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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,987	12/13/2000	Makoto Miyazaki	P/1071-1230	5703

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EXAMINER

DERRINGTON, JAMES H

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 09/11/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,987

Applicant(s)

MIYAZAKI ET AL.

Examiner

James Derrington

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1731

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP09-0106925 A in view of GB 1 274 211 or Takeuchi et al (5,733,499).

In regard to claim 17, JP09-0106925 A disclose the process of mixing a ceramic powder, binder and a first organic solvent and adding a second solvent having with a higher boiling point, i.e. having a relative evaporation rate lower than that of the first organic solvent and then removing the first solvent (See Abstract, par. 0011 of detailed description and claims). Instant claim 17 additionally recites dispersing the ceramic powder and solvent before adding the binder. GB 1 274 211 discloses the process of first dispersing a refractory material or ceramic (page 1, lines 49-62) in a solvent, e.g. ball milling, prior to adding a binder (See page 3, lines 63-70). This technique breaks up the agglomerates and reduces the powder particle size. It would have been obvious to disperse or ball mill the solvent and ceramic of JP09-0106925 A as set forth at par. 0011 of detailed description prior to adding the binder in view of teachings of GB 1 274 211. As further evidence, Takeuchi et al is cited as showing the step of first ball mixing ceramic powder and solvent prior to adding a binder solution (See Col. 7, lines 10-22) for the purpose of preparing ceramic green sheets.

Art Unit: 1731

In regard to claim 1 which recites additional features, JP09-0106925 discloses the steps of forming a plurality of composite structures by shaping a ceramic slurry to form a green sheet; applying a conductive paste so as to provide step-like sections of an internal circuit element film of an electronic component; applying a ceramic paste onto the regions on which the element film is not formed, forming laminations of a plurality of the composite structures and firing (Fig.1-4, Abstract, Claims and par. 0011 of detailed description).

With regard to the dependent claims, the cited references also disclose the following. Takeuchi et al disclose the presence of a dispersant (2 parts by weight) during the preparation of the ceramic powder and solvent slurry. It would have been obvious to add a dispersant the slurry of JP09-0106925 A for the art recognized purpose. The solvents disclosed by JP09-0106925 A appear to inherently possess the instantly claimed relative evaporation and boiling points (See detailed description, par. [0010]. But in addition, JP09-0106925 A show the specific combination of xylene (boiling point 140 °C) and terpineol (boiling point 220 °C) – See detailed description, par. [0011]. Takeuchi et al show the steps of filtering ceramic slurries in order to improve the process of producing green sheets (See Col. 1 and examples). It would have been obvious to use a filtering step(s) with the slurry of JP09-0106925 A for art recognized purposes. JP09-0106925 A also show dielectric ceramics and the production of capacitors and layers 13 and 14 can be produced from the same slurry.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP09-0106925 A in view of GB 1 274 211 or Takeuchi et al (5,733,499) as applied to claims 1-13 and 17-19 above, and further in view of Tokuda et al (6,157,285).

The JP09-0106925 A reference has been discussed above. The process provides a technique of preparing laminated electronic components so that cracking is avoided while enhancing moisture resistance and avoiding decline in thermal shock (See Problem to be Solved). Tokuda et al disclose a related laminated electronic component, i.e. an inductor, containing curved electrical paths (See Figs.). Magnetic ferrite powder is used to prepare the insulating sheets (See Col. 3, lines 43-50). It would have been obvious for one of ordinary skill in the art to have used the improved slurry forming process of JP09-0106925 A as discussed above and modified by the secondary references for preparing the inductors of Tokuda et al in order to gain the benefits discussed by JP09-0106925 A such as reduced cracking and enhanced moisture resistance.

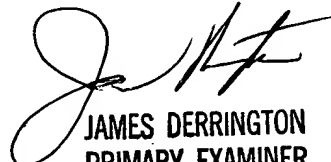
Claims 16 and 20 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions. Election was made **without** traverse in Paper No. 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Derrington whose telephone number is 703 308-3832. The examiner can normally be reached on 8:30am - 5pm.

Art Unit: 1731

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.


JAMES DERRINGTON
PRIMARY EXAMINER
ART UNIT ~~137~~ 1731

jd
September 6, 2002